

ABSTRACT OF THE DISCLOSURE

An optical modulator has an optical splitter for splitting an input light beam into a first and second light beam; a first and a second wave-guide arm connected to the optical splitter for receiving and transmitting therethrough the first and second light beam, respectively, the waveguide arms each including a core region having group IV semiconductor material or a combination of group IV semiconductor materials; an optical combiner connected to the first and second waveguide arm for receiving the first and second light beam and combining them into an output light beam; a first and a second electrode structure associated with the first and second waveguide arm, respectively; and a driving circuit for supplying voltage to the first and second electrode structure. The driving circuit is adapted to supply a first modulation voltage superimposed to a first bias voltage to the first electrode structure and a second modulation voltage superimposed to a second bias voltage to the second electrode structure.